heavy storms with thick, widespread cloud. Such weather has usually produced significantly more fat birds than appear in falls due to mist or local showers. Thus, for example, in 1976/77, weights were higher on 23 November than on 24th or 25th. Why are fat birds less prone to being grounded by mist alone? Do they tend to fly higher than lean birds, normally clearing the local cloud associated with the ridge? Future observation at the Lodge may help to answer such intriguing questions.

ACKNOWLEDGMENTS

Once again, we would like to thank E.C. Goss, Warden of Tsavo National Park (West), for allowing us to catch and ring at the Lodge. During 1976/77, B. Fimister, the Lodge Manager, and Mrs V. Fimister gave invaluable support and assistance for which we are extremely grateful. Other local or visiting ringers for whose help we are most grateful include Mrs D.E.G. Backhurst, P.L. & Mrs H.A. Britton, Mrs J. Dirks, R.J. Dowsett, P. Lack, Mlle F. Lemaire, and G. Zink.

REFERENCES

CLANCEY, P.A. 1975. The Great Reed Warbler *Acrocephalus arundinaceus* (Linnaeus) in the South African Sub-Region. *Durban Museum Novitates* 10: 232-238.

MOREAU, R.E. 1937. Migrant birds in Tanganyika Territory. *Tanganyika Notes & Records* 4: 17-50.

PEARSON, D.J. & BACKHURST, G.C. 1976. The southward migration of Palaearctic birds over Ngulia, Kenya. *Ibis* 118: 78-105.

(Received 18 February 1977)

NOTES ON THE FIELD IDENTIFICATION OF EAST AFRICAN HONEYGUIDES (INDICATORIDAE)

A.D. Forbes-Watson

That there is, indeed, a problem in the identification of honeyguides is exemplified by the chaotic state of their nomenclature, with no two authors even agreeing on the total number of species occurring, and with leading authorities reversing their own previous opinions. It is outside the scope of the present contribution to enter this controversy, which I hope to cover later, together with other honeyguid problems and observations. Similarly, I do not want to burden this account with references, and will simply express my great appreciation of the thorough work of Herbert Friedmann and the late James Chapin (see Key References). I am certainly the only person who has observed alive in the wild all the 16 African species I recognize, and I hope that the notes which follow will therefore be of use, particularly to field workers.

Of the 16 species, no less than 14 have been definitely recorded in East Africa; so that, with the probable occurrence of *Melichneutes robustus* we have to consider all but one of the African species. (The exception is the second - West African - species of *Melignomon* which is extremely unlikely to occur and will not be mentioned here again.) Luckily, identification problems do not entail all these species and in any one area, there will only be a few problem birds. But it has to be stressed that even the most experienced observer will not necessarily be able to identify a particular bird in the field (and sometimes

not even in the museum!). Let one example suffice: at Kakamega, a small individual *Indicator conirostris* may not with certainty always be differentiated from a large individual of *I. exilis*. I would say, however, that if a good view is obtained almost all birds can be identified in the field. But a noticeable and frustrating feature of honeyguides is their elusiveness - even a bird marked down to a particular part of a tree can disappear with no hint of how it did so. With the notable exception of *I. indicator*, there is little difference in the plumage of the sexes or between adult and immature, but some (? all) young *exilis* may not show an obvious dark malar stripe or white loral spot, and may then be confused with *willcocksi* or even *pumilio*. In general, males are slightly larger than females, and adults have blunter tips to the tail feathers with wider and more L-shaped dark markings on the white outer retrices. The East African species are (probable superspecies bracketed):

Indicator	*maculatus*	Spotted Honeyguide, Western forests
	variegatus	Scaly-throated Honeyguide, General, woodland + forest
	indicator	Black-throated (Greater) Honeyguide, General, woodland
	minor	Lesser Honeyguide, General, woodland
	conirostris	Thick-billed Honeyguide, Western forests
	exilis	Least Honeyguide, Western forests
	meliphilus	Pallid Honeyguide*, Eastern woodlands
	willcocksi	Willcocks' Honeyguide, Western forests
	narokensis	Kilimanjaro Honeyguide, Eastern woodlands
	pumilio	Chapin's Least Honeyguide, Western forests
Melichneutes	*robustus*	Lyre-tailed Honeyguide, Western forests
Melignomon	*zenkeri*	Zenker's Honeyguide, Western forests
Prodotiscus	*insignis*	Western Honeybird*, Western forests
	zambesiae	Eastern Honeybird*, Eastern woodlands + forest edges
	regulus	Wahlberg's Honeybird, General, woodlands

English names follow Mackworth-Praed & Grant (1960) where possible, but those marked * are innovations. I would also say that I am dissatisfied with some of these names.

The 15 species can be split conveniently into six main groups based on size and form conforming well with the genera now recognized, with *Indicator* being divided into three parts. In this context large species are in the 40-60 g range, medium *c.*25-30 g, small *c.*15-20 g, very small *c.*10 g. I feel that these weights give a better idea of size for field workers than do wing-lengths, and very roughly correspond to a weaver, sparrow, seedeater and warbler respectively. For those handling specimens skin measurements can readily be extracted from the literature. Differences in form concern the tail and bill.

GROUP 1. LARGE SPECIES WITH LYRATE TAIL (*MELICHNEUTES*) - 1 species, *M. robustus*. Not yet certainly recorded in East Africa, it can be expected in lowland forest in Bwamba, western Uganda. When seen, its tail form makes it unmistakable, even young birds show the beginnings of the lyrate shape at an early stage. One of the few honeyguides which can be identified by sound - its loud mechanical tooting is distinctive and it seems that the unique tail structure produces this sound.

GROUP 2. LARGE SPECIES WITH NORMAL TAIL (*INDICATOR* part) - 3 species, *indicator, maculatus, variegatus*. In this group the colour and markings of the underparts are the main distinguishing characters. *I. indicator* is unique in having distinctive immature, female and male plumages - all, fortunately, easy to recognize. The yellow flashes in the plumage are not often seen in the field. This species is plain below, yellow-washed in the young, pale greyish in the adult. The adult male has a distinct black throat and both sexes have pale pink bills.

The other two species are strongly marked below; *maculatus* just enters western Uganda in forests, with *variegatus* replacing it in forests, woodlands

and riverine forest strips further east. *I. maculatus* is dark olive-green below with paler spots, while *variegatus* is streaked, especially on the throat and upper breast. They hardly overlap, except in Bwamba - the adults there should be easily distinguished, but young *maculatus* are streaked on the foreneck. Their darker underparts and mottled bellies should make recognition easy.

GROUP 3. MEDIUM-SIZED SPECIES (*INDICATOR* part) - 2 species, *minor, conirostris.* These two species are very similar in appearance, but *minor* is paler below and is generally slightly smaller and not so heavy billed, but in western Uganda the underparts are darker and difficulties in identification can be expected. Where the two species occur together (forests in Uganda to Kapenguria, and Kakamega in Kenya) *conirostris* is found in the forest, with *minor* at the edges and in woodlands. Further east, where *conirostris* does not occur, *minor* does inhabit forest. Some individuals of *conirostris* might be confused with *exilis.*

Chapin once considered these three dull species with blackish malar streaks ('moustaches') to comprise a separate genus *Melignothes,* but this seems unnecessary, and he later combined it with *Indicator.*

GROUP 4. SMALL & VERY SMALL SPECIES WITH STUBBY BILL (*INDICATOR* part) - 5 species, *exilis, meliphilus, willcocksi, narokensis, pumilio.* This group is where the main headaches in honeyguide identification occur. All five species are very similar, up to three are completely sympatric and *exilis* can sometimes be confused with *conirostris* (see Table 1).

TABLE 1

Sympatry in some East African honeyguides in East Africa

	minor	*conirostris*	*exilis*	*meliphilus*	*willcocksi*	*narokensis*	*pumilio*
minor		x	(x)	x	-	x	(x)
conirostris	x		x	-	x	-	x
exilis	(x)	x		-	x	-	x
meliphilus	x	-	-		-	x	-
willcocksi	-	x	x	-		-	x
narokensis	x	-	-	x	-		-
pumilio	(x)	x	x	-	x	-	
	3+(2)	4	3+(1)	2	3	2	3+(1)

The aids to field identification are range and habitat, size, the presence or absence of a malar stripe and white loral spot, colour of underparts, and bill size. These features of the five small sibling species of *Indicator* found in East Africa are given below:

Indicator exilis occurs in forest in Uganda and western Kenya; it is small to medium with a normal bill; it has a malar stripe and a loral spot; the underparts are dark grey.

I. meliphilus is found in eastern woodlands; it is small with a normal bill, no malar stripe but it does have a loral spot; the underparts are very pale grey.

I. willcocksi is confined to western Uganda (in our area) where it inhabits forests. It is a small bird with a normal bill, no malar stripe or loral spot, and has dark grey underparts with a greenish tinge.

I. narokensis is a very small bird with a small bill found in eastern woodlands; it has no malar stripe or loral spot and the underparts are pale grey with some streaking.

I. pumilio is similar to *narokensis* but is found in forests of western Uganda and western Kenya; underparts medium grey with faint streaking.

All the honeyguides so far considered (i.e. in groups 1-4) have stubby bills - they are rather heavy looking and are fairly broad in relation to length and depth, and are more or less conical. The actual proportion varies somewhat - in the large species the bill is relatively longer, and in group 4 relatively shorter, particularly in *narokensis* and *pumilio* which have very short stubby bills. These two differ from all the other species in having narrow (from side to side) bills, making them wedge-shaped. This narrowness is recognizable if a good view is obtained from below and is much the best way of distinguishing *pumilio* from *exilis*, especially if the latter's malar stripe is indistinct.

GROUP 5. MEDIUM SPECIES WITH SLENDER BILL (*MELIGNOMON*) - 1 species, *M. zenkeri*. This species has only once been recorded in East Africa - from Bwamba, western Uganda. The colour pattern is fairly similar to *minor* but the form is more warbler-like. It is a leaf-gleaning bird with a fairly slender but strong bill; the normal honeyguide tail pattern is obvious.

GROUP 6. VERY SMALL SPECIES WITH VERY SLENDER BILL (*PRODOTISCUS*) - 3 species, *P. insignis, zambesiae, regulus*. Superficially like leaf-gleaning warblers, the very obvious pure white outer tail feathers should narrow the field of possible confusion. The fluffy, plump-looking body, very rounded head and disproportionately small slender bill should then make identification as a honeybird easy. *P. regulus* differs from the others in having a dull brownish (not green) back and is slightly larger. It occurs alongside *zambesiae* in the Arboretum, and Karura Forest, Nairobi and is easy to distinguish if a good view is obtained.

Until recently all honeybirds apart from *regulus* were considered as subspecies of Cassin's Honeybird *P. insignis*, but as it is now known that forest and woodland forms exist side by side, it is obvious that two species occur. *P. insignis* is a western forest form and is brighter green above and darker grey below than *zambesiae*. Locality is a help - *insignis* is only found in forests from western Kenya (Kakamega etc.) westwards, while *zambesiae* is a woodland bird, although it may be found along forest edges, for example, as at Karura.

A final warning! In the forests of Uganda and western Kenya the Honeyguide Greenbul *Baeopogon indicator* occurs, which is superficially so like a honeyguide that it has fooled many an observer. A good look at it should clear up any mistake - it does not have the honeyguide 'jizz' of a compact, heavy-looking body and its bill is too slender. No honeyguide has a white eye, which the male bulbul has, and a close look at the feet will show the normal passerine form, not the zygodactylous form of the Piciformes.

KEY REFERENCES

CHAPIN, J.P. 1939. The birds of the Belgian Congo, vol 2. *Bulletin of the American Museum of Natural History* 75.

---------- 1962. Sibling species of small African honey-guides. *Ibis* 104: 40-44.

FRIEDMANN, H. 1955. The Honey-guides. *Bulletin of the U.S. National Museum*. 208.

---------- 1968. Parallel evolution in the small species of *Indicator* (Aves). *Proceedings of the U.S. National Museum* No. 3655.

---------- 1970. Phenotypic potential and speciation in *Indicator* and *Prodotiscus*. *Ostrich* Supp. 8: 21-26.

(Received 23 February 1977)